

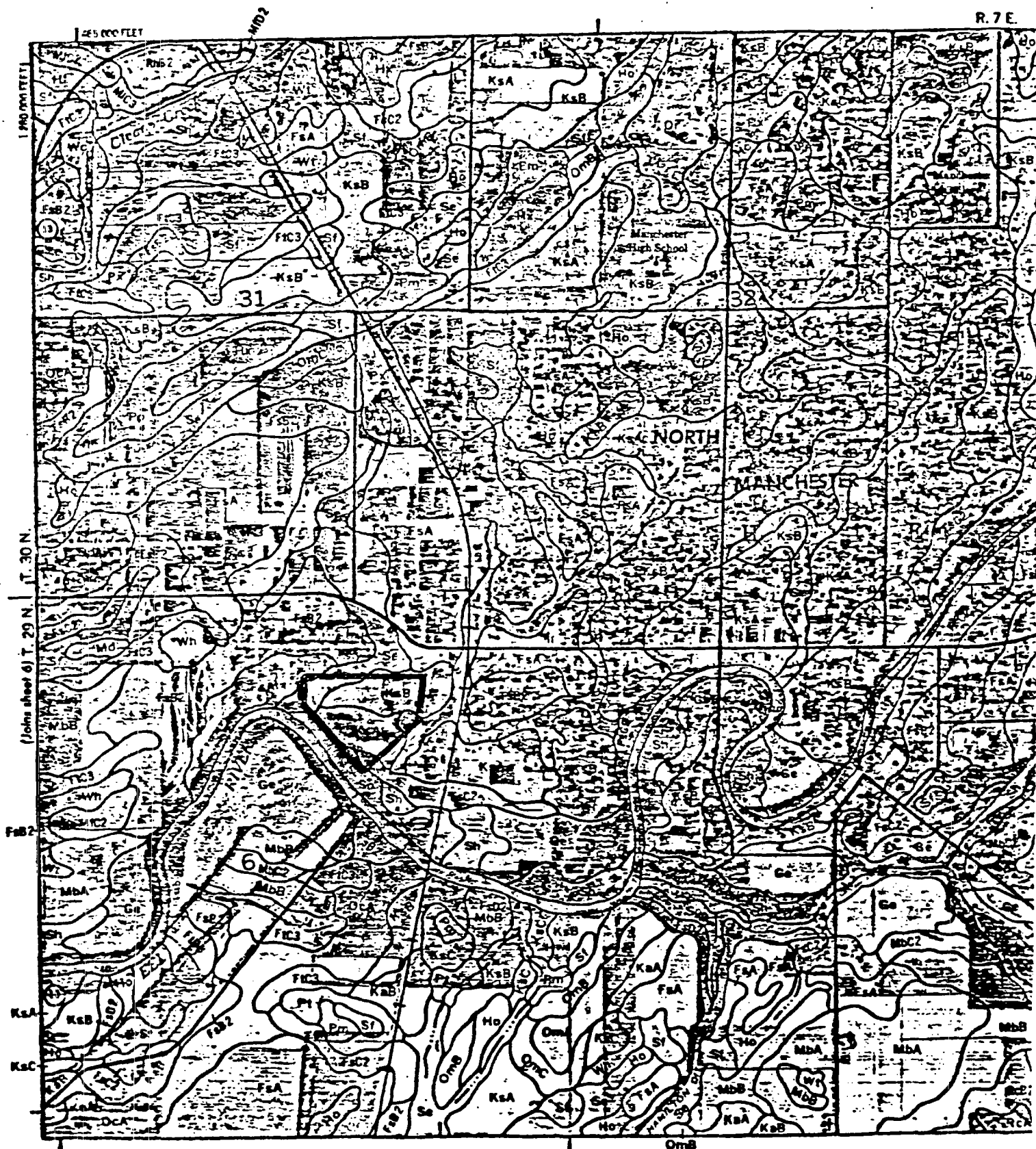
282886

Wabash
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Soil
Survey



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of the soil. Existing vegetation should be disturbed as little as possible during construction, and disturbed areas should be revegetated as soon as possible to reduce erosion. This soil is moderately limited for local roads and streets because of low strength and frost action. Providing drainage along roads helps prevent damage by frost action. The base material needs to be replaced or strengthened with more suitable material to support vehicular traffic. This soil readily absorbs the effluent from a septic tank absorption field, but it does not adequately filter the effluent. Consequently, the ground water can become contaminated.

This soil is in capability subclass IIe and in woodland suitability subclass 2o.

KsA—Kosciusko sandy loam, 0 to 2 percent slopes. This is a nearly level, deep, well drained soil on river terraces and outwash plains. The areas are elongated and range from 3 to 30 acres in size.

Typically, the surface layer is brown sandy loam about 9 inches thick. The subsoil is about 24 inches thick. The upper part is brown, friable sandy clay loam and gravelly sandy clay loam. The lower part is dark brown and yellowish brown, very friable gravelly sandy loam and loamy sand. The underlying material to a depth of 60 inches is yellowish brown gravelly sand. In places this soil is more than 40 inches thick. In some places the surface layer is darker than is typical of Kosciusko soils. In some places the surface layer is loamy fine sand. In places the slope is more than 2 percent.

Included with this soil in mapping are small areas of soils that have a gravelly surface layer and a few small areas of soils on short steep slopes. Also included are small areas of well drained Ormas soils, which have more sand than the Kosciusko soil, on ridges, somewhat poorly drained Homer soils and very poorly drained Sebewa soils in slight depressions, and excessively drained Rodman soils on steep breaks. The included soils make up 5 to 15 percent of the map unit.

The available water capacity of this soil is low. Permeability is moderate in the surface layer and subsoil and very rapid in the underlying material. Surface runoff is slow. The surface layer has a moderate content of organic matter, and it is friable. Tilth is good.

This soil is used mainly for cultivated crops. In a few areas it is used for hay, pasture, or woodland. It is a probable source of sand and gravel.

This soil is suited to corn, soybeans, and small grains. Drought is a moderate hazard in extended dry periods. This soil has a few stones on or near the surface that can hinder farming operations. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops help reduce evaporation and crusting and increase the infiltration of water.

This soil is suited to grasses and legumes for hay or pasture. Species that withstand drought should be planted. Pasture rotation, timely deferment of grazing,

and restricted use during dry periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Species that withstand drought should be favored. Plant competition is the main concern in management. Seedlings survive and grow well if competing vegetation is controlled. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or spraying.

This soil is moderately limited for buildings without basements because of the shrink-swell potential. It is well suited to buildings with basements. Foundations and footings should be designed and constructed to help prevent structural damage caused by the shrinking and swelling of the soil. This soil is moderately limited for local roads and streets because of the shrink-swell potential and frost action. The layers of the soil that have a moderate shrink-swell potential should be replaced with suitable soil material. Providing drainage along roads helps prevent damage by frost action. This soil readily absorbs the effluent from a septic tank absorption field, but it does not adequately filter the effluent. Consequently, the ground water can become contaminated.

This soil is in capability subclass IIIs and in woodland suitability subclass 2s.

KsB—Kosciusko sandy loam, 2 to 6 percent slopes. This is a gently sloping, deep, well drained soil on river terraces and outwash plains. The areas are irregular in shape and range from 3 to 25 acres in size.

Typically, the surface layer is brown sandy loam about 9 inches thick. The subsoil is about 29 inches thick. The upper part is brown, firm sandy clay loam and gravelly sandy clay loam. The lower part is dark yellowish brown and dark brown, friable and very friable gravelly sandy loam. The underlying material to a depth of 60 inches is yellowish brown gravelly sand. In places this soil is more than 40 inches thick. In some places the surface layer is darker than is typical, and in some places it is loamy fine sand. In places there are small areas where the slope is less than 2 percent or more than 6 percent.

Included with this soil in mapping are small areas of soils that have a gravelly surface layer and a few areas of soils on short steep slopes. Also included are small areas of well drained Ormas soils, which have more sand than the Kosciusko soil, on ridges, somewhat poorly drained Homer soils in narrow drainageways, and excessively drained Rodman soils on steep breaks. The included soils make up 2 to 15 percent of the map unit.

The available water capacity of this soil is low. Permeability is moderate in the surface layer and subsoil and very rapid in the underlying material. Surface runoff is medium. The surface layer has a moderate content of organic matter, and it is friable. Tilth is good.

This soil is used mainly for cultivated crops. In some areas it is used for hay or pasture. A few areas have

been left wooded. This soil is a probable source of sand and gravel.

This soil is suited to corn, soybeans, and small grains. Drought is a moderate hazard in extended dry periods. This soil has a few stones on or near the surface that can hinder farming operations. Crop rotation, diversions, contour farming, grassed waterways, grade stabilization structures, or other conservation practices help to reduce erosion and runoff if cultivated crops are grown. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops help control erosion, reduce crusting and evaporation, and increase the infiltration of water.

This soil is suited to grasses and legumes for hay or pasture. Species that withstand drought should be planted. Pasture rotation, timely deferment of grazing, and restricted use in dry periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Species that withstand drought should be favored. Plant competition is the main concern in management. Seedlings survive and grow well if competing vegetation is controlled. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or spraying.

This soil is moderately limited for buildings without basements because of the moderate shrink-swell potential. It is well suited to buildings with basements. Foundations and footings should be designed and constructed to help prevent structural damage caused by the shrinking and swelling of the soil. Existing vegetation should be disturbed as little as possible during construction, and disturbed areas should be revegetated as soon as possible to reduce erosion. This soil is moderately limited for local roads and streets because of the shrink-swell potential and frost action. The layers of soil that have a moderate shrink-swell potential need to be replaced with suitable soil material. Providing side ditches and culverts for drainage helps prevent damage to roads by frost action. This soil readily absorbs the effluent from septic tank absorption fields, but it does not adequately filter the effluent. Consequently, the ground water may become contaminated.

This soil is in capability subclass IIIe and in woodland suitability subclass 2s.

KsC—Kosciusko sandy loam, 6 to 12 percent slopes. This is a moderately sloping, deep, well drained soil on river terraces and outwash plains. The areas are irregular in shape and range from 3 to 8 acres in size.

Typically, the surface layer is brown sandy loam about 8 inches thick. The subsoil is about 21 inches thick. It is brown, firm gravelly sandy clay loam and gravelly sandy loam in the upper part and dark yellowish brown, friable gravelly sandy loam and loamy sand in the lower part. The underlying material to a depth of 60 inches is pale brown sand and gravelly sand. In places this soil is more than 40 inches thick. In some places the surface layer is

darker than is typical, and in a few places it is loamy fine sand. In places the slope is less than 6 percent or more than 12 percent.

Included with this soil in mapping are small areas of soils that have slopes of more than 18 percent and small areas of soils that have a gravelly surface layer. Also included are small areas of well drained Ormas soils, which have more sand than the Kosciusko soil, on ridges and excessively drained Rodman soils on steep breaks. The included soils make up 2 to 10 percent of the map unit.

The available water capacity of this soil is low. Permeability is moderate in the surface layer and subsoil and very rapid in the underlying material. Surface runoff is medium. The surface layer has a moderate content of organic matter, and it is friable. Tilth is good.

This soil is used mainly for cultivated crops. In some areas it is used for hay or pasture. A few areas have been left wooded. This soil is a probable source of sand and gravel.

This soil is suited to corn, soybeans, and small grains. Drought is a hazard in extended dry periods. This soil has a few stones on or near the surface that can hinder farming operations. Crop rotation, diversions, contour farming, grassed waterways, grade stabilization structures, or other conservation practices help reduce soil loss and surface runoff. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops help control erosion, reduce crusting and evaporation, and increase the infiltration of water.

This soil is suited to grasses and legumes for hay or pasture. Species that withstand drought should be planted. Pasture rotation, timely deferment of grazing, and restricted use in dry periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Species that withstand drought should be favored. Plant competition is the main concern in management. Seedlings survive and grow well if competing vegetation is controlled. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or spraying.

This soil is moderately limited for use as building sites because of the slope and the moderate shrink-swell potential. Buildings can be designed to conform to the slope. Foundations and footings should be designed and constructed to help prevent structural damage caused by the shrinking and swelling of the soil. Existing vegetation should be disturbed as little as possible during construction, and disturbed areas should be revegetated as soon as possible to reduce erosion. This soil is moderately limited for local roads and streets because of the shrink-swell potential, frost action, and slope. The layers that have a moderate shrink-swell potential should be replaced with suitable soil material. Providing side ditches and culverts for drainage helps prevent damage caused by frost action. Local roads and streets should

So—Sloan silty clay loam, frequently flooded. This is a nearly level, deep, very poorly drained soil on bottom lands. The areas are long and narrow and range from 3 to 80 acres in size.

Typically, the surface layer is very dark grayish brown silty clay loam about 8 inches thick. The subsurface layer is very dark grayish brown silty clay loam about 8 inches thick. The subsoil is dark grayish brown and dark gray, mottled, firm silty clay loam and loam about 16 inches thick. The underlying material to a depth of 60 inches is very dark gray, mottled, stratified loam, sandy loam, and loamy sand. In some small creek bottoms, this soil is underlain by sand and gravelly sand within a depth of 30 inches. In some areas on bottom lands of the Wabash River and its small tributaries, limestone bedrock is within a depth of 40 inches.

Included with this soil in mapping are areas of soils that are wet most of the year. Also included are small areas of well drained Genesee soils and somewhat poorly drained Shoa's soils in higher positions near the stream channel. The included soils make up 2 to 8 percent of the map unit.

The available water capacity of this soil is high. Permeability is moderately slow. The water table is at or near the surface. Surface runoff is slow. The surface layer has a high content of organic matter, and it is friable. Tilth is fair.

On the larger bottom lands, this soil is used mainly for cultivated crops. On the small, narrow bottom lands, it is used as pasture or left as woodland.

This soil is suited to corn, soybeans, and small grains if it is protected from flooding and is adequately drained. In most years planting may be delayed or replanting may be necessary because of spring flooding. Levees can be used to protect this soil from flooding. Shallow surface drains and subsurface drains can be used to remove excess water if outlets are available. Adequate outlets are difficult to find in some areas. In some places, if subsurface drains are installed below a depth of 3 feet, fine sand can flow into the drains and plug them. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops reduce crusting, improve soil tilth, and increase the infiltration of water.

This soil is well suited to grasses for hay or pasture if it is protected from flooding and adequately drained. Deep-rooted legumes grow poorly in unprotected areas of this soil because they cannot tolerate flooding and a high water table. Branches and other debris left on fields by floodwater can hinder the harvest of hay. Overgrazing or grazing when the soil is wet causes surface compaction and poor tilth.

This soil is suited to trees. Plant competition, seedling mortality, a windthrow hazard, and equipment limitations are concerns in management. Species that tolerate wetness should be favored. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or

spraying. Replanting is often necessary to establish a good stand. Care in thinning or no thinning at all can help prevent windthrow. In harvesting, trees should not be left standing alone or widely spaced. Trees generally are harvested in dry weather or when the ground is frozen.

This soil generally is not suitable for use as building sites and for sanitary facilities because of flooding. It is severely limited for local roads because of flooding and low strength. Constructing roads on raised and well compacted fill material and providing side ditches and culverts for drainage help to prevent the damage caused by flooding and low strength.

This soil is in capability subclass IIIw and in woodland suitability subclass 2w.

Wc—Walkkill silt loam. This is a nearly level, deep, very poorly drained soil in deep depressions on uplands, outwash plains, and river terraces. It is often ponded by runoff from adjacent higher areas. The areas of this map unit are oval or irregular in shape and range from 3 to 10 acres in size.

Typically, the surface layer is very dark grayish brown silt loam about 9 inches thick. The underlying material is dark grayish brown silt loam about 16 inches thick. Below that, to a depth of 60 inches, there is a buried organic soil that is black and very dark brown muck. In places the overburden of mineral soil is less than 16 inches thick. In places this soil is underlain by sedimentary peat or sandy and gravelly material.

Included with this soil in mapping are areas of undrained soils that are wet most of the year. Also included are small areas of well drained Fox, Kosciusko, Miami, and Morley soils on the slopes that surround the depressions. The included soils make up 4 to 12 percent of the map unit.

The available water capacity of this soil is high. Permeability is moderate in the mineral material and moderately slow to moderately rapid in the organic material. The water table is often at or above the surface in winter and spring. Surface runoff is very slow or is ponded. The surface layer has a high content of organic matter, and it is friable. Tilth is good.

In most places this soil has been drained at one time and has been allowed to revert to marsh. In adequately drained areas this soil is used for cultivated crops. The areas that have been partly but inadequately drained are used mainly as pasture.

This soil is suited to corn, soybeans, and small grains if it is adequately drained. Wetness is a major limitation, and ponding is the major hazard. Most crops grow poorly in the undrained areas. This soil generally is difficult to drain. Many areas do not have an adequate drainage outlet. Clay and concrete tile drains installed in the organic material settle and fall out of alignment. The poor stability of the organic material causes ditchbanks to slough and block the ditch. Conservation tillage that

TABLE 12.—BUILDING SITE DEVELOPMENT—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
RaA— Haskins	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: frost action.	Moderate: wetness.
HeG— Hennepin	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Ho— Homer	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, frost action.	Moderate: wetness.
Ht, Hx— Houghton	Severe: ponding, excess humus.	Severe: ponding, low strength.	Severe: ponding, low strength.	Severe: ponding, low strength.	Severe: ponding, low strength, frost action.	Severe: excess humus, ponding.
KaA— Kalamazoo	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: low strength, frost action.	Moderate: droughty.
KaB— Kalamazoo	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: low strength, frost action.	Moderate: droughty.
KsA— Kosciusko	Severe: cutbanks cave.	Moderate: shrink-swell.	Slight—	Moderate: shrink-swell.	Moderate: frost action, shrink-swell.	Moderate: droughty.
KsB— Kosciusko	Severe: cutbanks cave.	Moderate: shrink-swell.	Slight—	Moderate: shrink-swell, slope.	Moderate: frost action, shrink-swell.	Moderate: droughty.
KsC— Kosciusko	Severe: cutbanks cave.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action, shrink-swell.	Moderate: droughty, slope.
MbA— Martinsville	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: low strength, frost action.	Slight.
MbB— Martinsville	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: low strength, frost action.	Slight.
MbC2— Martinsville	Severe: cutbanks cave.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
Md— Martisco	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, frost action.	Severe: ponding, excess humus.
MeB— Metea	Severe: cutbanks cave.	Slight—	Slight—	Moderate: slope.	Moderate: frost action.	Moderate: droughty.
MeC— Metea	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: droughty, slope.
MfB2— Miami	Slight—	Moderate: shrink-swell.	Slight—	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
MfC2— Miami	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
MfD2, MfE2— Miami	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
KsA, KsB, KsC Kosciusko	Good	Probable	Probable	Poor: small stones, area reclaim.
MbA, MbB Martinsville	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
MbC2 Martinsville	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
Md Martisco	Poor: wetness, low strength.	Probable	Improbable: excess fines.	Poor: excess humus, wetness.
MeB Metea	Poor: thin layer.	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy.
MeC Metea	Poor: thin layer.	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy, slope.
MFB2 Miami	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
MFC2 Miami	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
MFD2, MFE2 Miami	Fair: slope, low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MhB2 Miami	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim.
MhC2, MhC3 Miami	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, slope.
MkD3 Miami	Fair: slope, low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MlC3 Miami	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Mn Milford	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Mp Millsdale	Poor: low strength, area reclaim, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, thin layer.
MsA, MsB2, MsC2 Milton	Poor: area reclaim, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
MtG Milton Variant	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
KsA, KsB----- Kosciusko	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Too sandy-----	Droughty.
KsC----- Kosciusko	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, too sandy.	Slope, droughty.
MbA----- Martinsville	Moderate: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MbB----- Martinsville	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MbC2----- Martinsville	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
Md----- Martisco	Severe: seepage.	Severe: ponding.	Severe: cutbanks cave.	Ponding, percs slowly, subsides.	Ponding, soil blowing, percs slowly.	Wetness, percs slowly.
Me----- Metea	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Too sandy, soil blowing.	Droughty.
MeC----- Metea	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, too sandy, soil blowing.	Slope, droughty.
MfB2----- Miami	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MfC2, MfD2, MfE2----- Miami	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
MhB2----- Miami	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MhC2, MhC3, MhD3, MhE3----- Miami	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
Mf----- Miford	Slight-----	Severe: ponding.	Severe: slow refill.	Ponding, frost action.	Erodes easily, ponding.	Wetness, erodes easily.
Mp----- Millsdale	Moderate: depth to rock.	Severe: ponding.	Severe: no water.	Depth to rock, frost action, ponding.	Depth to rock, ponding.	Wetness, depth to rock.
MsA----- Milton	Moderate: seepage, depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, erodes easily.	Erodes easily, depth to rock.
MsB2----- Milton	Moderate: seepage, depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, erodes easily.	Erodes easily, depth to rock.
MsC2----- Milton	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
MtC----- Milton Variant	Severe: slope.	Severe: piping, large stones.	Severe: no water.	Deep to water	Slope, large stones, depth to rock.	Large stones, slope, droughty.
MvC2, MvD2, MvE2, MvD3----- Morley	Severe: slope.	Slight-----	Severe: no water.	Deep to water	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth in	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
GnB2----- Glynwood	0-8	Silt loam-----	CL-ML, CL	A-4, A-6	0	95-100	90-100	80-100	55-90	23-40	4-15
	8-26	Clay loam, silty clay loam, clay.	CL, CH	A-7, A-6	0-5	95-100	85-100	75-100	65-95	35-55	15-30
	26-50	Clay loam, silty clay loam.	CL	A-6, A-4	0-5	95-100	80-100	75-95	65-90	25-40	7-18
GoC3----- Glynwood	0-7	Clay loam-----	CL	A-6, A-7	0-2	95-100	85-100	75-100	60-95	25-45	10-22
	7-23	Clay, clay loam, silty clay loam.	CL, CH	A-7, A-6	0-5	95-100	85-100	75-100	65-95	35-55	15-30
	23-60	Clay loam, silty clay loam.	CL	A-6, A-4	0-5	95-100	80-100	75-95	65-90	25-40	7-18
HaA----- Haskins	0-12	Loam-----	CL-ML, CL	A-4, A-6	0	95-100	85-100	70-100	55-90	25-40	5-20
	12-25	Clay loam, loam, gravelly sandy clay loam.	SC, CL	A-6, A-4, A-2	0	85-100	70-100	55-85	30-65	20-40	7-20
	25-60	Clay, silty clay, clay loam.	CH, CL	A-7, A-6	0	100	85-100	80-100	70-95	35-65	15-40
HeG----- Hennepin	0-3	Loam-----	CL, CL-ML	A-4, A-6	0-5	90-100	85-100	70-100	60-95	25-40	5-20
	3-13	Loam, sandy loam, clay loam.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0-5	85-100	80-100	65-100	35-95	20-50	5-25
	13-60	Loam, sandy loam, clay loam.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0-5	85-100	80-100	65-100	35-95	20-50	5-25
Ho----- Homer	0-11	Loam-----	CL, CL-ML	A-4, A-6	0	95-100	90-100	85-100	70-95	25-35	5-15
	11-15	Silty clay loam, clay loam, loam.	CL	A-6, A-7	0	90-100	90-100	90-100	70-95	30-50	15-30
	15-35	Gravelly sandy clay loam, sandy clay loam, sandy loam.	SC	A-2-6, A-6	0-3	90-100	85-100	75-90	30-50	25-35	10-15
	35-60	Stratified loamy sand to very gravelly sand.	SP, GP, SP-SM, GP-GM	A-1	1-5	30-70	22-55	7-20	2-10	—	NP
Ht, Hx----- Houghton	0-60	Sapric material	Pt	A-8	0	—	—	—	—	—	—
KaA, KaB----- Kalamazoo	0-12	Sandy loam-----	SM, SM-SC	A-2-4	0-5	95-100	80-100	60-70	15-35	<20	NP-7
	12-30	Clay loam, sandy clay loam, gravelly sandy loam.	SC, CL	A-4, A-6	0-5	95-100	70-95	65-95	35-80	20-38	9-20
	30-49	Loamy coarse sand, loamy sand, gravelly sandy loam.	SM, SP-SM	A-2-4, A-1-b	0-5	95-100	60-95	40-60	10-25	—	NP
	49-60	Sand, gravelly sand.	SP, SP-SM	A-1, A-3, A-2	0-5	60-80	25-75	10-55	0-10	—	NP
KaA, KaB, KaC----- Kosciusko	0-9	Sandy loam-----	SM, SM-SC, ML, CL-ML	A-4, A-2-4	0	85-100	80-100	50-90	30-70	<25	NP-6
	9-19	Sandy clay loam, gravelly sandy loam.	SM-SC, SC, OC, GM-GC	A-4, A-6, A-2, A-1	0-3	55-80	55-75	35-65	15-40	20-40	5-20
	19-38	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam.	SM, GM, GP-GM, SP-SM	A-1, A-2-4	0-5	45-75	40-70	20-50	10-30	<20	NP
	38-60	Gravelly coarse sand.	SP, SP-SM, GP, GP-GM	A-1	1-8	30-60	30-55	15-40	2-10	<20	NP

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density g/cm ³	Permeability in/hr	Available water capacity in/in	Soil reaction pH	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter pct
								K	T		
Ho----- Homer	0-11	10-17	1.35-1.55	0.6-2.0	0.20-0.24	5.1-7.3	Low-----	0.37	4	5	1-3
	11-15	20-35	1.45-1.65	0.6-2.0	0.17-0.19	5.1-6.0	Moderate-----	0.37			
	15-35	17-27	1.45-1.65	0.6-2.0	0.15-0.17	5.1-6.0	Low-----	0.37			
	35-60	2-8	1.50-1.70	6.0-20	0.02-0.04	7.9-8.4	Low-----	0.10			
Ht, Hx----- Houghton	0-60	---	0.15-0.45	0.2-6.0	0.35-0.45	5.6-7.8	-----	-----	---	3	>70
KaA, KaB----- Kalamazoo	0-12	8-20	1.10-1.65	2.0-6.0	0.10-0.15	5.1-7.3	Low-----	0.24	4	3	1-3
	12-30	18-35	1.25-1.70	0.6-2.0	0.10-0.18	5.1-7.3	Moderate-----	0.32			
	30-49	2-15	1.50-1.65	6.0-20	0.02-0.08	5.1-7.8	Low-----	0.10			
	49-60	0-16	1.50-1.65	6.0-20	0.01-0.03	7.4-8.4	Low-----	0.10			
KsA, KsB, KsC----- Kosciusko	0-9	7-17	1.30-1.45	0.6-2.0	0.13-0.20	5.1-7.3	Low-----	0.28	4	3	.5-2
	9-19	18-27	1.40-1.60	0.6-2.0	0.07-0.14	5.1-7.3	Moderate-----	0.28			
	19-38	4-12	1.50-1.70	0.6-2.0	0.05-0.11	5.6-7.8	Low-----	0.28			
	38-60	1-5	1.70-1.90	>20	0.02-0.04	7.4-8.4	Low-----	0.10			
MbA, MbB, MbC2----- Martinsville	0-12	8-17	1.30-1.45	0.6-2.0	0.20-0.24	5.6-7.3	Low-----	0.37	5	5	1-3
	12-29	18-30	1.40-1.60	0.6-2.0	0.17-0.20	5.1-6.5	Moderate-----	0.37			
	29-53	10-25	1.40-1.60	0.6-2.0	0.12-0.14	5.6-7.3	Low-----	0.24			
	53-60	3-23	1.50-1.70	0.6-2.0	0.19-0.21	7.4-8.4	Low-----	0.24			
Md----- Martisco	0-13	---	0.30-0.55	0.6-6.0	0.35-0.45	6.1-8.4	-----	-----	---	3	30-75
	13-56	---	---	0.06-0.2	---	7.4-8.4	Low-----	---	---		
	56-60	2-8	1.60-1.80	2.0-6.0	0.05-0.10	7.4-8.4	Low-----	---	---		
MeB, MeC----- Metea	0-10	3-8	1.45-1.60	6.0-20	0.10-0.12	5.6-7.3	Low-----	0.17	5	2	.5-2
	10-25	2-10	1.50-1.70	6.0-20	0.06-0.11	5.1-7.3	Low-----	0.17			
	25-49	25-35	1.50-1.70	0.6-2.0	0.15-0.19	5.6-7.8	Moderate-----	0.32			
	49-60	20-30	1.40-1.65	0.6-2.0	0.05-0.19	7.4-8.4	Low-----	0.32			
MfB2, MfC2----- Miami	0-8	20-27	1.30-1.45	0.6-2.0	0.19-0.21	5.6-7.3	Moderate-----	0.37	5	5	1-3
	8-32	27-35	1.45-1.60	0.6-2.0	0.15-0.19	5.6-7.8	Moderate-----	0.37			
	32-60	15-26	1.45-1.60	0.6-2.0	0.17-0.19	7.4-8.4	Low-----	0.37			
MfD2, MfE2----- Miami	0-8	11-22	1.30-1.45	0.6-2.0	0.20-0.24	5.6-7.3	Low-----	0.37	5	5	1-3
	8-32	25-35	1.45-1.65	0.6-2.0	0.15-0.20	5.6-8.0	Moderate-----	0.37			
	32-60	15-30	1.55-1.90	0.2-0.6	0.05-0.19	6.6-8.4	Moderate-----	0.37			
MhB2, MhC2----- Miami	0-6	11-22	1.30-1.45	0.6-2.0	0.20-0.24	5.6-7.3	Low-----	0.37	5	5	1-3
	6-33	25-35	1.45-1.65	0.6-2.0	0.15-0.20	5.6-6.0	Moderate-----	0.37			
	33-60	15-30	1.55-1.90	0.2-0.6	0.05-0.19	6.6-8.4	Moderate-----	0.37			
MlC3, MlD3----- Miami	0-9	27-35	1.35-1.60	0.6-2.0	0.18-0.20	5.6-7.3	Moderate-----	0.37	4	6	.5-2
	9-25	25-35	1.45-1.65	0.6-2.0	0.15-0.20	5.6-6.0	Moderate-----	0.37			
	25-60	15-30	1.55-1.90	0.2-0.6	0.05-0.19	6.6-8.4	Moderate-----	0.37			
MlC3----- Miami	0-9	27-35	1.35-1.50	0.6-2.0	0.17-0.19	5.6-7.3	Moderate-----	0.37	5	6	.5-2
	9-26	27-35	1.45-1.60	0.6-2.0	0.15-0.19	5.6-7.8	Moderate-----	0.37			
	26-60	15-26	1.45-1.60	0.6-2.0	0.17-0.19	7.4-8.4	Low-----	0.37			
Mm----- Milford	0-15	35-42	1.30-1.50	0.6-2.0	0.12-0.23	5.6-7.3	High-----	0.28	5	4	5-6
	15-37	35-42	1.40-1.60	0.2-0.6	0.18-0.20	5.6-7.8	Moderate-----	0.43			
	37-60	20-30	1.50-1.70	0.2-0.6	0.20-0.22	6.6-8.4	Moderate-----	0.43			
Mp----- Millsdale	0-13	27-32	1.30-1.50	0.6-2.0	0.19-0.22	6.1-7.3	Moderate-----	0.32	4	6	4-7
	13-36	35-45	1.40-1.70	0.2-0.6	0.12-0.16	6.1-8.4	High-----	0.32			
	36	---	---	---	---	---	---	---	---		
MsA, MsB2, MsC2----- Milton	0-7	14-27	1.30-1.50	0.6-2.0	0.18-0.23	5.1-7.3	Low-----	0.37	4	6	1-3
	7-33	35-50	1.45-1.70	0.2-0.6	0.12-0.18	4.5-7.8	Moderate-----	0.37			
	33-38	25-45	1.40-1.70	0.2-2.0	0.12-0.16	6.1-7.8	Moderate-----	0.37			